Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application.

Listing of Claims:

Please amend the claims as follows without prejudice. No new matter has been added by way of these amendments.

1. (Currently amended) A method for matching a plurality of data sets from boreholes or core sections, the data sets being obtained from sensors are two-dimensional data sets and are indicative of earth formation, boundary, or interface of earth formations and of dip in the vicinity of the borehole, the method for depth matching comprising:

(a) transforming the two-dimensional data sets into three-dimensional images using the Hough transform;

(b) deriving two dimensional curves from the three-dimensional images by the application of the Hough transform to depth derivatives of sensor signals, generated by sensors; and

(c) deriving an offset from the two-dimensional curves; ~~and~~

(d) depth matching the two dimensional data sets to each other by applying the offset to said two dimensional data sets.~~;~~ and

(e) performing at least one of displaying, storing and transferring the depth matched data sets.

2. (Previously presented) The method in accordance with claim 1 wherein the two dimensional curves have peaks indicating dip events in the vicinity of the borehole.

3. (Previously presented) The method in accordance with claim 1 wherein the two-dimensional data sets have gaps in the data and the three-dimensional images created using the Hough transform are immune from the gaps.

4. (Previously presented) The method in accordance with claim 1 wherein two-dimensional curves for data sets from sensors that are vertically spaced from each other longitudinally along the borehole are processed to determine an offset that will match the two-dimensional curves.

5. (Previously presented) The method in accordance with claim 4 wherein the determined offset is applied to the data sets from the vertically spaced sensors to depth match the data sets to each other.

6. (Currently amended) A method for matching a plurality of data sets from boreholes or core sections, the data sets being obtained from sensors are two-dimensional data sets and are indicative of a boundary, or interface of earth formations and of dip in the vicinity of the borehole, the method for depth matching comprising:

combining individual signals making up the respective two-dimensional data set for each two-dimensional data set of the plurality of data sets to create an first and a second averaged signal;

processing the first and the second averaged signals, each corresponding to one two-dimensional data set, to calculate an offset that correlates the first and the second averaged signals; ~~and~~

depth matching the two-dimensional data sets to each other by applying the calculated offset to said two-dimensional data sets; and

performing at least one of displaying, storing and transferring the depth matched data sets.

7. (Original) The method of claim 6 wherein said averaged signals are obtained by determining an average of the sensor signals along the bedding dip for a given depth in the borehole.

8. (Original) The method of claim 7 wherein said computation of bedding dips for the sensor signals is performed by way of the Hough transform.

9. (Previously presented) The method in accordance with claims 1 wherein two-dimensional data sets to be depth matched are obtained at the same time by sensors that are vertically spaced from each other longitudinally along the borehole.

10. (Previously presented) The method in accordance with claims 1 wherein two-dimensional data sets to be depth matched are obtained at different times for the same borehole.

11. (Previously presented) The method in accordance with claims 1 wherein a two-dimensional data set to be depth matched is obtained from a core section.

12. (Previously presented) The method of claim 1 wherein each of said sensor signals is obtained from a sensor of a plurality of sensors.

13. (Original) The method of claim 12 wherein each sensor includes a plurality of sub sensors.

14. (Original) The method of claim 13 wherein each signal includes a trace, the trace being a side-by-side combination of signals from the plurality of sub sensors.

15. (Previously presented) The method in accordance with claims 1 wherein said method is applicable to real time depth matching of data sets from sensors that are vertically spaced from each other longitudinally along the borehole.

16. (Previously presented) The method in accordance with claim 6 wherein two-dimensional data sets to be depth matched are obtained at the same time by sensors that are vertically spaced from each other longitudinally along the borehole.

17. (Previously presented) The method in accordance with claim 6 wherein two-dimensional data sets to be depth matched are obtained at different times for the same borehole.

18. (Previously presented) The method in accordance with claim 6 wherein a two-dimensional data set to be depth matched is obtained from a core section.

19. (Previously presented) The method of claim 6 wherein each of said sensor signals is obtained from a sensor of a plurality of sensors.